

earlier in which he was able to collect from all the literature, including the post mortem observations, only about twenty cases.* It now remained for the cystoscope to define cystitis and to differentiate it from other intra vesical disorders.

THE CYLINDRICAL CYSTOSCOPE.†—One of the first, if not the first, to employ cystoscopy was Gustav Simon. He used the familiar cylindrical cystoscope with an obturator through which light is reflected to the bladder by a head mirror. Later, Pawlick in Europe and Kelly in America perfected the instrument and added to its value by placing the patient in the elevated pelvic position. Finally Kelly still further contributed to the usefulness of the instrument by the adoption of the knee breast position.

THE ELECTRICAL CYSTOSCOPE.—The next practical development was the panelectroscope of Leiter in Vienna and later the similar instrument of Casper. Both of these cystoscope carried the electric light ray into the bladder by means of refracting prisms at the external end of the tube. The final development of this instrument began with Nitze in 1876. He placed the electric vacuum light at the inner extremity of the tube in such a manner as to give direct illumination and to transmit to the eye through a series of lenses an exact picture of the bladder mucosa magnified. The electric current was furnished by a battery from which insulated conductors passed through the tube to and from the lamp.

Cystoscopy and urethral exploration in the female owing to the shortness and dilatibility of the urethra may be satisfactorily accomplished by means of the simple tubular cystoscope of Pawlick and Kelly. The greater length of the male urethra and consequent greater distance of the field for inspection from the eye and its magnifying power render the prismatic electroscope indispensable. The electrical cystoscope, even in the female, is preferable.

By means of the Cystoscope the entire interior of the bladder may be brought into view; foreign bodies, tumors and other pathological changes may be recognized and the ureters and the pelvis of the kidney may be explored. The instrument has often revealed the presence of stones, tumors and ulcers which had entirely escaped detection by the sound. Numerous cases in which cystitis is of only secondary importance to other associated lesions, such for example as tumors, tuberculosis, piles or hemorrhoids of the bladder are now frequently observed by the cystoscope.

Cystoscopy is of great value in preventing blind and meddling treatment for a class of cases which present the subjective symptoms of cystitis but in which inspection fails to show any lesion whatever of the bladder mucosa.

The value of the instrument is also incalculable when only limited areas are diseased, for example, in the mild inflammations of the trigone and in fissure at the neck of the bladder. Under such conditions the

* Belfield, *Am. Gyn. & Obstet. Journal*, Jan., 1899.

† Viertel, *Veits Handbuch der Gynakologie*.